

Intraoperative radiotherapy (IOERT) with electrons in breast cancer

A. Bouché Babiloni¹, V. Morillo Macías¹, C. Ferrer Albiach¹, J. Lopez², I. Beato Tortajada¹, R. García¹, E. Boldó³, R. Lozoya³

¹ Organismo Autónomo Local Hospital Provincial de Castellón, Oncología Radioterápica, Spain

² Organismo Autónomo Local Hospital Provincial de Castellón, Radiofísico, Spain

³ Organismo Autónomo Local Hospital Provincial de Castellón, Cirujano Oncológico, Spain



Introduction. The IOERT is a variety of treatment that consists of direct and precise irradiation of a tumor bed during the surgical act. This allows direct visualization of target volumes, with the consistent reduction of toxicity in adjacent healthy tissues through their separation. The major recurrences can be found in the immediate vicinity of the tumor bed (85% in the same quadrant).

Aim. Evaluation of surgical complications, acute and aesthetic toxicity in patients with breast cancer and IOERT.

Materials and methods. Between July 2008 and January 2013, 21 women previously diagnosed with breast cancer, have been treated with conservative surgery: mean age 65 (39–82). Inclusion criteria: PS 0–1, age ≥ 45 years, histology of infiltrating single centered ductal carcinoma; tumor size ≤ 2.5 cm, no surgical macroscopically negative margins and study prior to surgery with mammography and magnetic resonance. IOERT was administered in 7 patients (33.3%) as a boost (9 Gy), and as exclusive (21 Gy) in 14 (66.7%), including the PTV + 2 cm margin. The applicator most used was 6 and 7 cm (35%) and energy of 9 MeV (65%). External radiotherapy consisted of 40.05–50 Gy. Acute toxicity was assessed with the RTOG scale.

Results. The follow up was 53 months. Two patients developed postoperative seroma requiring drainage. The acute toxicity was G1 in 14 (71.4%) and G2 in 6 (28.6%). The aesthetics was good or excellent in 80% and 20% acceptable.

Conclusions. The IOERT can be used as exclusive treatment or prior to external radiotherapy as an overlay. Eliminates the possible vagueness of the tumor location, allowing treatment with a limited volume of glandular tissue. By preserving the skin and subcutaneous tissue of radiation reduces the likelihood of fibrosis and telangiectasia, which improves aesthetics and toxicity. It also reduces the duration of radiation contributing to patient's comfort and cost reduction.

<http://dx.doi.org/10.1016/j.rpor.2013.03.726>

Long-term results of adjuvant once-weekly hypofractionated radiotherapy for breast cancer in elderly patients

I. García Ríos, J. Rico Pérez, J. Gómez-millán, C. Jodár López, F. Castillo Montiel, J. Medina Carmona
Complejo Hospitalario Virgen de la Victoria, Oncología Radioterápica, Spain



Background and purpose. To evaluate local control, early and late reactions and disease-free survival of elderly breast cancer patients treated with adjuvant or definitive once-a-week hypofractionated (HF) radiotherapy (RT).

Patients and methods. Between 2007 and 2012, 107 patients with a median aged 78.03 (35–89) years with breast cancer were treated by breast-conserving surgery or radical surgery and adjuvant Radiotherapy. The main reasons for adopting this schedule were patient very old age, locally advanced case, and/or comorbid disease. Radiation was delivered as once-a-week, 6.5 Gy for a total breast dose of 32.5 Gy in five fractions, followed with 1–2 fractions of 6.5 Gy to the tumour site.

Results. There was a median follow-up of 30.30 months (6.9–58.8 months). 88 (82.2%) patients underwent breast-conserving surgery (BCS), 14 (13.1%) patients radical surgery and 5 (4.1%) no surgery. The clinical stage distribution was as follows: T1 in 49.2%, T2 in 35.8%, T3 in 9.4%, and T4 in 5.6%. Axillary lymph nodes were positive in 59% of cases. Estrogen receptors were present in 85.7%, and progesterone receptors in 85.6%. Human epidermal growth factor receptor-2-positive (HER-2+) in 8.2% of case. Early skin reactions were tolerable with no documented Radiation Therapy Oncology Group Grade 3 or higher toxicity. Late effects, mainly subcutaneous fibrosis, were recorded in 54 patients, they were classified as grade 1 in 41 cases, grade 2 in 8 cases and grade 3 in 5 patients. No toxicity in 51 patients. Local and distant failure was scored in 9 cases (8.6%). At a median follow-up of 30.30 months (6.9–58.8 months), 81 patients (75.7%), was alive and disease free.

Conclusions. According to the findings from this retrospective study, the HF-RT schedule is an acceptable alternative for elderly patients, allows a good local control, with acceptable toxicity.

<http://dx.doi.org/10.1016/j.rpor.2013.03.727>

Long-term toxicity and cosmetic results using 3D-CRT to deliver accelerated partial breast irradiation in early-stage breast cancer

N. Rodríguez¹, X. Sanz¹, J. Dengra², P. Foro¹, P. Pérez², E. Fernández-velilla², I. Membrive², A. Reig², J. Quera¹, J. Lio², O. Pera², M. Algara¹

¹ Parc de Salut Mar, Universitat Pompeu Fabra, Spain

² Parc de Salut Mar, Spain



Purpose. Concerns with the use of any form of APBI relate to the large fraction sizes administered and a possible increase in the rate of development of late effects. We analyzed toxicity and cosmetics results using three-dimensional conformal external beam radiation therapy (3D-CRT) to deliver accelerated partial breast irradiation in our phase III trial.

Methods and materials. One hundred and two patients undergoing breast-conserving surgery were randomized to receive WBRT ($n = 51$) or APBI ($n = 51$). The whole breast received 48 Gy with 2-Gy daily fractions, with or without additional 10 Gy irradiation to